

## ABSTRACT OF THE DISCLOSURE

A controller-assisted, manually shifted transmission system having a control system and method for controlling automatic range shifts are disclosed. Automatic range shifts are determined by control logic utilizing predetermined logic rules to evaluate transmission system criteria. The control logic determines a set of potential target gear ratios. Engine overspeed tests evaluate the set of potential target gear ratios in combination with the transmission system criteria. The appropriate range shift is determined and executed based on the selected target gear ratio.